

NEXTERA ENERGY DUANE ARNOLD, LLC  
CENTRAL IOWA POWER COOPERATIVE  
CORN BELT POWER COOPERATIVE  
DOCKET 50-331  
DUANE ARNOLD ENERGY CENTER  
RENEWED FACILITY LICENSE

Renewed License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) having found that:
  - A. The application for license filed by FPL Energy Duane Arnold, LLC,<sup>\*</sup> Central Iowa Power Cooperative and Corn Belt Power Cooperative (the licensees) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;
  - B. Deleted;
  - C. The facility will be maintained in conformity with the application, as amended; the provisions of the Act; and the rules and regulations of the Commission;
  - D. There is reasonable assurance: (i) that the activities authorized by this renewed license can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
  - E. NextEra Energy Duane Arnold, LLC is technically qualified and NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative and Corn Belt Power Cooperative are financially qualified to engage in the activities authorized by this renewed license in accordance with the rules and regulations of the Commission;
  - F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
  - G. The issuance of this renewed license will not be inimical to the common defense and security or to the health and safety of the public;
  - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental costs and considering available alternatives, the issuance of renewed Facility License No. DPR-49 is in accordance with 10 CFR Part 50, Appendix D, of the Commission's regulations and all applicable requirements of said Appendix D have been satisfied;

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<sup>\*</sup>On April 16, 2009, the name "FPL Energy Duane Arnold, LLC" was changed to "NextEra Energy Duane Arnold, LLC."

- I. Deleted.
2. Renewed Facility License No. DPR-49 is hereby issued to NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative (CIPCO) and Corn Belt Power Cooperative (Corn Belt) to read as follows:
  - A. This renewed license applies to the Duane Arnold Energy Center, a permanently defueled boiling water reactor and associated equipment (the facility), owned by NextEra Energy Duane Arnold, LLC, Central Iowa Power Cooperative and Corn Belt Power Cooperative and operated by NextEra Energy Duane Arnold, LLC. The facility is located on NextEra Energy Duane Arnold, LLC's, Central Iowa Power Cooperative's and Corn Belt Power Cooperative's site near Palo in Linn County, Iowa. This site consists of approximately 500 acres adjacent to the Cedar River and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 1 through 14) and the Environmental Report as supplemented and amended (Supplements 1 through 5).
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
    - (1) NextEra Energy Duane Arnold, LLC, pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess and use the facility as required for nuclear fuel storage; and CIPCO and Corn Belt to possess the facility at the designated location in Linn County, Iowa, in accordance with the procedures and limitations set forth in this license;
    - (2) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Part 70, to possess at any time special nuclear material that was used as reactor fuel, in accordance with the limitations for storage, as described in the Updated Final Safety Analysis Report, as supplemented and amended as of June 1992 and as supplemented by letters dated March 26, 1993, and November 17, 2000.
    - (3) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproduct, source or sealed sources for radiation monitoring equipment calibration, and to possess any byproduct, source and special nuclear material as sealed neutron sources previously used for reactor startup or reactor instrumentation; and fission detectors;
    - (4) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated radioactive apparatus components;
    - (5) NextEra Energy Duane Arnold, LLC, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not to separate, such byproduct and special nuclear materials that were produced by the operation of the facility.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Deleted

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 311, are hereby incorporated in the license. NextEra Energy Duane Arnold, LLC shall operate the facility in accordance with the Permanently Defueled Technical Specifications.

(3) Deleted

(4) Deleted

(5) Physical Protection

NextEra Energy Duane Arnold, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification,

and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Duane Arnold Energy Center Physical Security Plan," submitted by letter dated May 16, 2006.

NextEra Energy Duane Arnold, LLC shall fully implement and maintain in effect all provisions of the Commission-approved Duane Arnold Energy Center/NextEra Energy Duane Arnold, LLC Cyber Security Plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duane Arnold Energy Center/NextEra Energy Duane Arnold, LLC CSP was approved by License Amendment No. 278, as supplemented by changes approved by license Amendment No. 284 and Amendment No. 291.

(6) Deleted

(7) Additional Conditions

The Additional Conditions contained in Appendix B, as revised through Amendment No. 279, are hereby incorporated into this license. NextEra Energy Duane Arnold, LLC shall operate the facility in accordance with the Additional Conditions.

(8) The licensee is authorized to revise the Updated Final Safety Analysis Report by deleting the footnote for Section 9.1.4.4.5 which states: "\*The NRC has not endorsed the reactor building crane as single-failure proof (Reference 9)," and by deleting Reference 9 of the references for Section 9.1.

(9) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:

1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

(10) The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.

(11) Deleted.

(12) Deleted.

(13) Deleted.

- D. This license is effective as of the date of issuance and is effective until the Commission notifies the licensee in writing that the license is terminated.

FOR THE NUCLEAR REGULATORY COMMISSION

*Original signed by Eric J. Leeds*

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Enclosures:

1. Appendix A Technical Specifications
2. Appendix B Additional Conditions

Date of Issuance: December 16, 2010

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1.0 USE AND APPLICATION

1.1 Definitions

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-----NOTE-----  
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.  
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<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
CERTIFIED FUEL HANDLER	A CERTIFIED FUEL HANDLER is an individual who complies with provisions of the Certified Fuel Handler training program required by Technical Specification Section 5.3.2.
NON-CERTIFIED OPERATOR	A NON-CERTIFIED OPERATOR is an individual who complies with the provisions of Technical Specifications Section 5.3.1.

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1.0 USE AND APPLICATION

1.2 DELETED

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## 1.0 USE AND APPLICATION

### 1.3 Completion Times

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PURPOSE	The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.
BACKGROUND	Limiting Conditions for Operation (LCOs) specify minimum requirements for safely maintaining the facility. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Times(s).
DESCRIPTION	The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the facility is in a specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the facility is not within the LCO Applicability.
IMMEDIATE COMPLETION TIME	When “Immediately” is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

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## 1.0 USE AND APPLICATION

### 1.4 Frequency

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**PURPOSE**            The purpose of this section is to define the proper use and application of Frequency requirements.

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**DESCRIPTION**      Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The “specified Frequency” consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.

The use of “met” or “performed” in these instances conveys specific meanings. A Surveillance is “met” only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being “performed,” constitutes a Surveillance not “met.” “Performance” refers only to the requirement to specifically determine the ability to meet the acceptance criteria.

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1.4 Frequency (continued)

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EXAMPLE The following example illustrates the manner in which Frequencies are specified.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the facility is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the facility is in a specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified, then SR 3.0.3 becomes applicable.

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2.0 DELETED

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3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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LCO 3.0.1	LCOs shall be met during the specified conditions in the Applicability, except as provided in LCO 3.0.2.
LCO 3.0.2	Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met.
LCO 3.0.3	Deleted.
LCO 3.0.4	Deleted.
LCO 3.0.5	Deleted.
LCO 3.0.6	Deleted.
LCO 3.0.7	Deleted.
LCO 3.0.8	Deleted.
LCO 3.0.9	Deleted.

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### 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

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SR 3.0.1           SRs shall be met during the specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

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SR 3.0.2           The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as “once,” the above interval extension does not apply.

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SR 3.0.3           If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

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(continued)

3.0 SR APPLICABILITY (continued)

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SR 3.0.4            Entry into a specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3.

                         This provision shall not prevent entry into specified conditions in the Applicability that are required to comply with ACTIONS.

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3.1 DELETED

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3.2 DELETED

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3.3 DELETED

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3.4 DELETED

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3.5 DELETED

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3.6 DELETED

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## 3.7 PLANT SYSTEMS

### 3.7.1 Deleted

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## 3.7 PLANT SYSTEMS

### 3.7.2 Deleted

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## 3.7 PLANT SYSTEMS

### 3.7.3 Deleted

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## 3.7 PLANT SYSTEMS

### 3.7.4 Deleted

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## 3.7 PLANT SYSTEMS

### 3.7.5 Deleted

## 3.7 PLANT SYSTEMS

### 3.7.6 Deleted

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## 3.7 PLANT SYSTEMS

3.7.7 Deleted

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3.7 PLANT SYSTEMS

3.7.8 Spent Fuel Storage Pool Water Level

LCO 3.7.8        The spent fuel storage pool water level shall be  $\geq$  36 ft.

APPLICABILITY:    During movement of irradiated fuel assemblies in the spent fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A.      Spent fuel storage pool water level not within limit.	A.1    Suspend movement of irradiated fuel assemblies in the spent fuel storage pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.8.1        Verify the spent fuel storage pool water level is $\geq$ 36 ft.	In accordance with the Surveillance Frequency Control Program

## 3.7 PLANT SYSTEMS

3.7.9 Deleted

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3.8 DELETED

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3.9 DELETED

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3.10 DELETED

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## 4.0 DESIGN FEATURES

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### 4.1 Site Location

The plant site, which consists of approximately 500 acres, is adjacent to the Cedar River approximately 2.5 miles northeast of the Village of Palo, Iowa. The boundary of the exclusion area defined in 10 CFR 100 is delineated by the property lines. The distance to the outer boundary of the low population zone is 6 miles. The plan of the site is shown on UFSAR Figures 1.2-1 and 1.2-2.

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### 4.2 Deleted

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### 4.3 Fuel Storage

#### 4.3.1 Criticality

The spent fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having the following limits for maximum k-infinity in the normal reactor core configuration at cold conditions and maximum lattice-average U-235 enrichment weight percent:
 

	$k_{\infty}$	<u>wt %</u>
i) 7x7 and 8x8 pin arrays (Legacy Fuel Assemblies only; Holtec and PaR racks)	$\leq 1.29$	$\leq 4.6$
ii) 10x10 pin arrays (Holtec and PaR racks)	$\leq 1.29$	$\leq 4.95$
- b.  $k_{\text{eff}} \leq 0.95$  if fully flooded with unborated water, which includes an allowance for uncertainties as described in 9.1 of the UFSAR; and
- c. A nominal 6.060 inches for HOLTEC designed and 6.625 inches for PaR designed center to center distance between fuel assemblies placed in the storage racks.
- d. The Boral neutron absorber shall have a  $^{10}\text{B}$  areal density greater than or equal to 0.0162 grams  $^{10}\text{B}/\text{cm}^2$  with an uncertainty of 0.0012 grams  $^{10}\text{B}/\text{cm}^2$ .

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(continued)

#### 4.0 DESIGN FEATURES (continued)

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##### 4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 831 ft. – 2 3/4 in.

##### 4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2563 fuel assemblies in a vertical orientation, including no more than 152 fuel assemblies stored in the cask pit in accordance with UFSAR Section 9.1.

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## 5.0 ADMINISTRATIVE CONTROLS

### 5.1 Responsibility

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5.1.1 The plant manager shall be responsible for overall facility operation and shall delegate in writing the succession to this responsibility during his absence.

The plant manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect safe storage and maintenance of spent nuclear fuel.

5.1.2 The Operations Shift Manager shall be responsible for the shift command function.

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## 5.0 ADMINISTRATIVE CONTROLS

### 5.2 Organization

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#### 5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for facility staff and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear fuel.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all facility organization positions. These relationships shall be documented and updated, as appropriate, in organizational descriptions. These organizational descriptions shall be documented in the UFSAR or QA Program Description;
- b. The plant manager shall be responsible for overall safe operation of the facility and shall have control over those onsite activities necessary for safe storage and maintenance of spent nuclear fuel;
- c. The corporate officer shall have responsibility for the overall facility safety and shall take measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the facility to ensure safe management of spent nuclear fuel.
- d. The individuals who train the CERTIFIED FUEL HANDLERS and those who carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their ability to perform their assigned functions.

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(continued)

5.2 Organization (continued)

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5.2.2 Facility Staff

The facility organization shall meet the following:

- a. Each on-duty shift shall include at least the following shift staffing:
    - One (1) Operations Shift Manager (see f below); and
    - Two (2) NON-CERTIFIED OPERATORS (see g below)
  - b. Shift crew composition may be less than the minimum requirement of 5.2.2.a for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements. During such absences, no fuel movement or movement of loads over the spent fuel shall be permitted. This provision does not permit any shift crew position to be unmanned upon shift change due to an incoming shift crew member being late or absent.
  - c. At times when nuclear fuel is stored in the spent fuel pool, at least one (1) person qualified to stand watch in the Control Room (NON-CERTIFIED OPERATOR or CERTIFIED FUEL HANDLER) shall be present in the Control Room.
  - d. Oversight of fuel handling operations shall be provided by a CERTIFIED FUEL HANDLER.
  - e. A person qualified to implement radiation protection procedures shall be on site during movement of fuel and during movement of loads over the fuel.
  - f. The Operations Shift Manager shall be a CERTIFIED FUEL HANDLER.
  - g. The position of NON-CERTIFIED OPERATOR may be filled by a CERTIFIED FUEL HANDLER.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.3 Facility Staff Qualifications

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- 5.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications referenced for comparable positions in ANSI/ANS 3.1-1978. The radiation protection manager shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.
- 5.3.2 The CERTIFIED FUEL HANDLER shall be qualified to the NRC-approved training and retraining program for CERTIFIED FUEL HANDLERS. The NRC-approved training and retraining program for CERTIFIED FUEL HANDLERS shall be maintained.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.4 Procedures

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- 5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:
- a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
  - b. The emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;
  - c. Quality assurance for effluent and environmental monitoring;
  - d. [Deleted]; and
  - e. All programs specified in Specifications 5.5.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.5 Programs and Manuals

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The following programs shall be established, implemented and maintained.

#### 5.5.1 Offsite Dose Assessment Manual (ODAM)

- a. The ODA M shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODA M shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating Report and Radioactive Material Release Report required by Specification 5.6.2 and Specification 5.6.3.
- c. Licensee initiated changes to the ODA M:
  1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
    - a. Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
    - b. A determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent dose or setpoint calculations;
  2. Shall become effective after the approval of the plant manager; and
  3. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODA M as a part of or concurrent with the Radioactive Material Release Report for the period of the report in which any change in the ODA M was made. Each change shall be identified by markings in the margins of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

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## 5.5 Programs and Manuals (continued)

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5.5.2 Deleted

5.5.3 Deleted

### 5.5.4 Radioactive Effluent Controls Program

This program, conforming to 10 CFR 50.36a, provides for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODAM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- a. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODAM;
- b. Limitations on the concentrations of radioactive material released in liquid effluents from the site to unrestricted areas, conforming to ten times (10x) the concentrations listed in Appendix B, Table 2, Column 2 to 10 CFR 20.1001 – 20.2402;
- c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents pursuant to 10 CFR 20.1302 and with the methodology and parameters in the ODAM;
- d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas, conforming to 10 CFR 50, Appendix I;
- e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODAM at least every 31 days;

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## 5.5 Programs and Manuals

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### 5.5.4 Radioactive Effluent Controls Program (continued)

- f. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems which were used to establish compliance with the design objectives in 10 CFR 50, Appendix I, Section II be used when specified to provide reasonable assurance that releases of radioactive material in liquid and gaseous effluents be kept as low as reasonably achievable;
- g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the site boundary shall be limited to the following:
  - 1. For noble gases: less than or equal to a dose rate of 500 mrem/yr to the whole body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
  - 2. For iodine-131, iodine-133, tritium, and for all radionuclides in particulate form with half lives > 8 days: less than or equal to a dose rate of 1500 mrem/yr to any organ;
- h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I;
- i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and
- j. Limitations on the annual dose or dose commitment to any member of the public, beyond the site boundary, due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Radioactive Effluent Controls Program surveillance frequency.

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## 5.5 Programs and Manuals (continued)

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5.5.5 Deleted

5.5.6 Deleted

5.5.7 Deleted

### 5.5.8 Storage Tank Radioactivity Monitoring Program

This program provides controls for the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The liquid radwaste quantities shall be determined in accordance with Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures".

The program shall include a surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is  $\leq 50$  curies, excluding tritium and dissolved or entrained noble gases. The liquid radwaste storage tanks in the Low-Level Radwaste Processing and Storage Facility are considered unprotected outdoor tanks.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.5.9 Deleted

### 5.5.10 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:
  1. A change in the TS incorporated in the license; or

(continued)

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## 5.5 Programs and Manuals

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### 5.5.10 Technical Specifications (TS) Bases Control Program (continued)

2. A change to the UFSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.10b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.11 Deleted

5.5.12 Deleted

5.5.13 Deleted

### 5.5.14 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to assure the associated Limiting Conditions for Operation are met.

- a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.
- b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.
- c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.

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## 5.5 Programs and Manuals (continued)

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### 5.5.15 Spent Fuel Pool Neutron Absorber Monitoring Program

This program provides routine monitoring and actions to ensure that the condition of Boral in the spent fuel pool racks is appropriately monitored to ensure that the Boral neutron attenuation capability described in the criticality safety analysis of UFSAR Section 9.1 is maintained. The program shall include the following:

- a. Neutron attenuation in situ testing for the PaR racks shall be performed at a frequency of not more than 10 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum Boral areal density will be that value assumed in the criticality safety analysis.
  - b. Neutron attenuation testing of a representative Boral coupon for the Holtec racks shall be performed at a frequency of not more than 6 years, or more frequently based on observed trends or calculated projections of Boral degradation. The acceptance criterion for minimum Boral density will be that value assumed in the criticality safety analysis.
  - c. Description of appropriate corrective actions for discovery on nonconforming Boral.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.6 Reporting Requirements

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The following reports shall be submitted in accordance with 10 CFR 50.4.

#### 5.6.1 DELETED

#### 5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the facility during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Assessment Manual (ODAM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODA M, as well as summarized and tabulated results of these analyses and measurements in the format of the table in Regulatory Guide 4.8. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

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5.6 Reporting Requirements (continued)

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5.6.3 Radioactive Material Release Report

The Radioactive Material Release Report covering the operation of the facility during the previous calendar year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the facility. The material provided shall be consistent with the objectives outlined in the ODAM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1.

5.6.4 DELETED

5.6.5 DELETED

5.6.6 DELETED

5.6.7 DELETED



## 5.0 ADMINISTRATIVE CONTROLS

### 5.7 High Radiation Area

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As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:

#### 5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.
  - b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
  - c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
  - d. Each individual or group entering such an area shall possess:
    1. A radiation monitoring device that continuously displays radiation dose rates in the area; or
    2. A radiation monitoring device that continuously transmits dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
    3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or
    4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and, (continued)
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5.7 High Radiation Area (continued)

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- (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
  - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.
- e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
  - 1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.
  - 2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

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5.7 High Radiation Area (continued)

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- b. Access to, and activities in, each area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
- c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
  - 1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached with an appropriate alarm setpoint, or
  - 2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or
  - 3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,
    - (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
    - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, or personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

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5.7 High Radiation Area (continued)

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4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the “As Low As is Reasonably Achievable” principle, a radiation monitoring device that continuously displays radiation dose rates in the area.
- e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.
- f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible light shall be activated at the area as a warning device.

APPENDIX B

ADDITIONAL CONDITIONS

LICENSE NO. DPR-49

NextEra Energy Duane Arnold, LLC (the term licensee in Appendix B refers to NextEra Energy Duane Arnold, LLC or prior license holders) shall comply with the following conditions on the schedule noted below:

<u>Amendment Number</u>	<u>Additional Conditions</u>	<u>Implementation Date</u>
223 275	NextEra Energy Duane Arnold, LLC is authorized to relocate certain requirements included in Appendix A to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's application dated October 30, 1996, as supplemented and consolidated in its March 31, 1998, submittal. These relocations were evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 180 days of the date of this amendment.
260 (1) 275	NextEra Energy Duane Arnold shall take all necessary steps to ensure that the external trust fund is established at the time of the closing of the transfer of the license from Interstate Power (IPL) to FPLE Duane Arnold is maintained in accordance with the requirements of the December 23, 2005 order approving the license transfer, NRC regulations, and consistent with the safety evaluation supporting the order. The trust agreement shall be in a form acceptable to the NRC.	This amendment is effective immediately and shall be implemented within 30 days of the date of this amendment.
260 (2) 279	DELETED	
260 (3)	DELETED	